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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/784,141	02/16/2001	Gen Oikawa	NIT-254	2141

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EXAMINER

MAGEE, CHRISTOPHER R

ART UNIT	PAPER NUMBER
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2653

DATE MAILED: 05/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/784,141

Applicant(s)

OIKAWA ET AL.

Examiner

Christopher R. Magee

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) 3,5-7 and 9 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4,8 and 10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 February 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>3</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of claims 1, 2, 4, 8 and 10 in Paper No. 6 is acknowledged.
2. Claims 3, 5-7 and 9 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected group, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 6.

Priority

3. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Objections

4. Claim 10 is objected to because of the following informalities: In claim 10, line 3, "A" should be -a--. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 4 and 10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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Claims 4 and 10 recite the limitation "Ni content accuracy of ± 0.1 wt%" and "Ni content accuracy of ± 0.3 wt%". This limitation is unclear and confusing. What weight is the accuracy ± 0.1 wt% of or what weight is the accuracy ± 0.3 wt% of? Also, both claims 4 and 10 state that the film thickness is both less than $1.0 \mu\text{m}$ and greater than $1.0 \mu\text{m}$. It is unclear and confusing as to what the thickness is.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1, 4 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Hoshi et al. (hereinafter Hoshi) (US 6,025,978).

- Regarding claim 1, Hoshi discloses a magnetic thin film head (Figure 3) comprising:
a write head element 12; and
a read head element 5;

wherein a ferromagnetic film 10 having a soft magnetic characteristics and a magnetic shield function is formed of NiFe permalloy material (col. 2, lines 30-40) by electroplating (col. 8, lines 34-39) in the vicinity of a sensor film 5 arranged as said read element,

wherein Ni in composition of a formed layer is 80.8 wt. % to 82 wt. % (col. 2, lines 50-54).

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- Regarding claims 4 and 10, Hoshi discloses a magnetic disk apparatus having a magnetic thin film head comprising (col. 1, lines 15-21):

a write head element 12; and

a read head element 5;

wherein a ferromagnetic film 10 having a soft magnetic characteristics and a magnetic shield function is formed of NiFe permalloy material (col. 2, lines 30-40) by electroplating (col. 8, lines 34-39) in the vicinity of a sensor film 5 arranged as said read element; and

wherein Ni in composition of a formed layer is 80.8 wt. % to 82 wt. % (col. 2, lines 50-54). Since claimed limitation is included in stated range of Hoshi, the claimed content accuracy is incorporated as well.

Hoshi shows said Ni is composed of a formed layer having a thickness exceeding 1.0 μm and having a thickness less than 1.0 μm (Figure 3).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hoshi et al. (hereinafter Hoshi) (US 6,025,978) as applied to claim 1 above, and further in view of Ishiwata et al. (hereinafter Ishiwata) (US 6,687,082 B1).

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- Regarding claim 2, Hoshi discloses all the features including the Ni in composition of a formed layer is 81 to 83-wt % (col. 2, lines 50-54). The claimed limitation of 80.8 wt% to 82.0 wt% and 81.0 wt% to 81.2 wt% is included in stated range of Hoshi. However, Hoshi does not show the Ni is composed of an initially formed layer having a thickness of 1.0 μm and of an upper layer on said initially formed layer is 1.0 μm thick.

Ishiwata teaches the thickness of a plated magnetic layer is 0.1 μm or more, and is 1.0 μm or less (col. 5, lines 49-51).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the ferromagnetic film of Hoshi with the layer thickness as taught by Ishiwata.

The rationale is as follows: One of ordinary skill in the art at the time of the invention would have been motivated to make the ferromagnetic film of Hoshi with the layer thickness as taught by Ishiwata in order to restrain the influence of characteristic deterioration (eddy current loss) at high frequency (Ishiwata; col. 9, line 65 to col. 10, line 2).

8. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hoshi et al. (hereinafter Hoshi) (US 6,025,978) in view of Ishiwata et al. (hereinafter Ishiwata) (US 6,687,082 B1).

- Regarding claim 8, Hoshi discloses a magnetic disk apparatus having a magnetic thin film head comprising (col. 1, lines 15-21):

- a write head element 12; and

- a read head element 5;

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wherein a ferromagnetic film 10 having a soft magnetic characteristics and a magnetic shield function is formed of NiFe permalloy material (col. 2, lines 30-40) by electroplating (col. 8, lines 34-39) in the vicinity of a sensor film 5 arranged as said read element; and

the Ni in composition of a formed layer is 81 to 83-wt % (col. 2, lines 50-54).

The claimed limitation of 80.8 wt% to 82.0 wt% and 81.0 wt% to 81.2 wt% is included in stated range of Hoshi. However, Hoshi does not show the Ni is composed of an initially formed layer having a thickness of 1.0 μm and of an upper layer on said initially formed layer is 1.0 μm thick.

Ishiwata teaches the thickness of a plated magnetic layer is 0.1 μm or more, and is 1.0 μm or less (col. 5, lines 49-51) and discloses a lower shield 2 thickness of 1.0 μm (col. 6, lines 61-62).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the ferromagnetic film of Hoshi with the layer thickness as taught by Ishiwata.

The rationale is as follows: One of ordinary skill in the art at the time of the invention would have been motivated to make the ferromagnetic film of Hoshi with the layer thickness as taught by Ishiwata in order to restrain the influence of characteristic deterioration (eddy current loss) at high frequency (Ishiwata; col. 9, line 65 to col. 10, line 2).

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:


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- a. Kitada et al. (US 5,287,237) is cited to show an antiferromagnetic film superior in corrosion resistance, magnetoresistance-effect element,
- b. Varga et al. (US Patent Application Publication US 2001/0015878 A1) is cited to show a magnetic sensor and magnetic storage using the same.
- c. Kouchiyama (US 6,358,379) is cited to show a method of forming a magnetoresistance effect thin film.

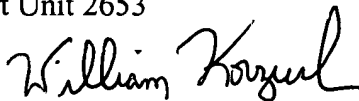
10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher R. Magee whose telephone number is (703) 605-4256. The examiner can normally be reached on M-F, 8: 00 am-5: 30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Korzuch can be reached on (703) 305-6137. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Christopher R. Magee
Patent Examiner
Art Unit 2653

May 17, 2004


WILLIAM KORZUCH
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